

## **HOLDING DOCK FOR PORTABLE COMPUTERS**

### **FIELD OF THE INVENTION**

The present invention relates to a holding dock for portable computers and particularly to a holding dock that has  
5 an upper lid, a holding surface, and two sidewalls to form a heat dissipation space.

### **BACKGROUND OF THE INVENTION**

The popularity of portable computers has risen dramatically during recent years. They may be compact but  
10 are equipped with almost the same facilities as regular desktop computers. Hence heat the dissipation space has to be reduced, which in turn also reduces dispersion which is generally not as efficient as desktop computers. Usage over a short period of time might not result in overheating; however prolonged use  
15 on a fixed spot with no way for thermal energy to effectively escape can cause the computer to shutdown (self protection). Frequent occurrence shortens the service life of a portable computer.

ROC patent publication No. 562177 entitled "Heat  
20 dissipation base dock for portable computers" discloses a technique which uses an aluminum plate with good conducting properties. The aluminum plate has a front end bent downwards to form an inclined angle for the plate surface so that a heat dissipation space is formed thereunder. The plate  
25 surface has heat dissipation vents. A fan is located thereunder

so that when the portable computer is rested on the aluminum plate for use, the aluminum plate absorbs heat, and the fan generates cool air to carry away the thermal energy to achieve heat dissipation. While providing a means for heat dissipation in the portable computer, the aluminum plate is too bulky and inconvenient to carry. It also cannot be connected to other electronic equipment. There is still room for improvement.

### **SUMMARY OF THE INVENTION**

The primary object of the invention is to provide a holding dock for a portable computer that has an improved heat dissipation effect. The holding dock according to the invention has an upper lid, a holding surface, sidewalls and a detachable hub to form a heat dissipation space which allows thermal air to flow. A heat dissipation fan is mounted on a sidewall to dispel hot air. The heat dissipation space may also hold a portable computer to facilitate carrying and storing.

Another object of the invention is to provide a holding dock for portable computers for connecting to a plurality of electronic devices. A hub is mounted on one sidewall to enable the portable computer to connect external electronic devices.

The foregoing, as well as additional objects, features and advantages of the invention will be more readily apparent from the following detailed description, which proceeds with reference to the accompanying drawings.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a perspective view of the present invention.

FIG. 2 is a perspective view of the present invention from the bottom side.

5 FIG. 3 is an exploded view of the present invention.

FIG. 4 is a schematic view of the invention showing heat dispersing direction.

FIG. 5 is a schematic view of a first embodiment of the invention.

10 FIG. 6 is a schematic view of a second embodiment of the invention.

FIG. 7 is a schematic view of the invention in a use condition.

FIG. 8 is a schematic view of a third embodiment of the invention.

## **15 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Referring to FIGS. 1, 2 and 3; the holding dock 10 according to the invention includes an upper lid 11, a holding surface 12, sidewalls 13 and 18, and a detachable hub 14. The  
20 holding surface 12 has heat dissipation sections 17 which have a plurality of vents for dispelling heat generated by a portable computer 20 resting on the holding surface 12.

Referring to FIG. 3, the holding surface 12 is pivotally engaged with a coupling plate 123 to fasten the upper lid 11  
25 when it is laid on the holding surface 12. The coupling plate

123 and the upper lid 11 have respectively a coupling member 124 and a coupling element 111 that correspond to and can latch on to each other. In addition, the upper lid 11, holding surface 12 and sidewalls 13 and 18 form heat dissipation space 15. Besides dispersing heat for a portable computer 20, the heat dissipation space 15 can also house the portable computer 20 to facilitate carrying. The holding surface 12 also has anti-slipping sections 122 (referring to FIG. 2) to prevent the holding dock 10 from slipping when rested on a flat surface, and also avoids scratching the holding surface 12. The hub 14 is located on a sidewall 18 and has a plurality of insertion slots 141 to enable the portable computer 20 to connect external electronic devices (not shown in the drawings). A heat dissipation fan 143 is mounted on the sidewall 18 to facilitate heat dissipation of the portable computer 20. The hub 14 has heat dissipation vents 142 matching the fan 143 for dispelling heated air.

Referring to FIG. 4, when the portable computer 20 is resting on the holding dock 10, high temperatures generated by the portable computer 20 enters the heat dissipation space 15 through the heat dissipation sections 17, the heated air is drawn by the fan 143 and dispelled outside through the heat dissipation vents 142.

Refer to FIGS. 5 and 6 for a second embodiment of the invention. A sliding lid 125 is added to the heat dissipation

sections 17 on the holding surface 12a to mate the tracks 126. Such a structure provides water-proofing for the portable computer inside the holding dock. FIG. 6 shows that the holding surface 12b is formed with an indented recess to  
5 facilitate thermal airflow from the heat dissipation sections 17 into the holding dock 10 to further improve heat dissipation.

Referring to FIG. 7, foot racks 16 are provided on two corresponding ends of the sidewall 13 that can turn to extend from the bottom side of the holding dock 10 so that an  
10 inclined surface is formed to conform to ergonomics when in use.

Refer to FIG. 8 for another embodiment of the invention. The upper lid 11 is fixedly mounted on the holding surface 12. The coupling plate 123 is pivotally engaged with the holding  
15 surface 12, and has respectively a coupling member 124 and a coupling element 123 that may be coupled to form a heat dissipation space 15 which opens and closes to hold a portable computer (not shown in the drawing).

While the preferred embodiments of the invention have  
20 been set forth for the purpose of disclosure, modifications to the disclosed embodiments of the invention as well as other embodiments thereof may occur to those skilled in the art. Accordingly, the appended claims are intended to cover all embodiments which do not depart from the spirit and scope of  
25 the invention.